
National Park Service
Cultural Landscapes Inventory
2004



Camp Muir
Mount Rainier National Park



National Park Service
U.S. Department of the Interior

Pacific West
Regional Office

Cultural Resource
Programs

CULTURAL LANDSCAPES INVENTORY (CLI) PROGRAM
2010 Condition Assessment Update for:

Camp Muir
Mount Rainier National Park

Mount Rainier National Park concurs with the updated CLI data (see attached) and updated condition assessment for Camp Muir as identified below:

CONDITION ASSESSMENT: FAIR

Good: indicates the landscape shows no clear evidence of major negative disturbance and deterioration by natural and/or human forces. The landscape's cultural and natural values are as well preserved as can be expected under the given environmental conditions. No immediate corrective action is required to maintain its current condition.

Fair: indicates the landscape shows clear evidence of minor disturbance and deterioration by natural and/or human forces, and some degree of corrective action is needed within 3-5 years to prevent further harm to its cultural and/or natural values. If left to continue without appropriate corrective action, the cumulative effect of the deterioration of many of the landscape characteristics will cause the landscape to degrade to a poor condition.

Poor: indicates the landscape shows clear evidence of major disturbance and rapid deterioration by natural and/or human forces. Immediate corrective action is required to protect and preserve the remaining cultural and natural values.


Superintendent, Mount Rainier National Park

9/9/10
Date

Please return to:

Vida Germano
PWR CLI Coordinator
National Park Service
Pacific West Regional Office
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Oakland, CA 94607-4807
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(510) 817-1484 (fax)

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Proposed Revisions in the CLI Database for: MORA – Camp Muir

1. Chronology

It is proposed that the following entry be added to the chronology section:

2005	AD	2005	AD	Restored	The Guide Shelter and Public Shelter were restored.
2005	AD	2006	AD	Reconstructed	The NPS Storage Building was reconstructed.

2. Analysis and Evaluation – Buildings and Structures

It is proposed that the following text (noted in *italics*) be added to the end of the existing description:

Buildings and Structures

The buildings at Camp Muir are all associated with the operation of a high-elevation campsite. This includes overnight shelters, comfort stations, storage, and a cookhouse. Buildings dating from the period of significance are the Guide Shelter, designed by Carl F. Gould (a Seattle architect and a member of the Mountaineers), which was constructed in 1916; the Public Shelter, designed by the National Park Service and constructed in 1921; and the storage building (formerly the men's pit toilet), which was designed by the National Park Service and built by the Civilian Conservation Corps in 1935–1936.

The architectural character of the historic shelters at Camp Muir reflects the philosophy and design features of the rustic style of architecture. The structures are low profile with almost flat rooflines and are of stone masonry construction. They echo the rocky terrain of the Cowlitz Cleaver and serve as a practical accommodation to the severe environment. The 1997 National Historic Landmark District nomination form describes the structures at Camp Muir as follows: “The randomly coursed masonry of stone harvested from nearby slopes created an almost camouflage effect. The flat roofs kept the building profiles low, and projecting beams evoke a pseudo-ethnographic architectural image”.

Public Shelter

Changes have been made to the Public Shelter since the period of significance. The original entrance door on the south wall of the building was blocked with mortar and small stones, and a new entrance door was constructed on the west side of the building in the opening originally occupied by a window. Snow buildup and wind probably necessitated these changes. The construction took place sometime after 1942, as illustrated by historic photographs. Other architectural changes were the loss of crenellations from the edge of the roof and the loss of finials from the tops of the wing walls. The crenellation pattern did not appear on the original blueprints of 1921, but photographs dated 1929 do show the building with crenellations. Mortar has been placed in the joints to strengthen the walls. The threshold has a contemporary poured concrete pad with inset stones. The flooring inside is also contemporary poured concrete. Concrete has also been poured along the rear façade to reinforce the foundation. The retaining structure has been rebuilt.

The Public Shelter shows evidence of exposure to the harsh elements. Tarpaper on the ceiling is torn

~~causing the roof to leak. The window framing has dry rot. Ventilation inside is poor. The walls need to be re-mortared as cracks are present on interior walls. The waterproof coating is peeling. Exposed roof joists are dry and weathered. Stone has been lost from southeast wing wall.~~

In 2005, the Public Shelter was restored, this included: tuck pointing and waterproofing of masonry walls, constructing a new roof, and replacing windows and window frames. The Public Shelter is currently used for cooking by the concessionaire guides.

Guide Shelter

Changes have also been made to the Guide House since the period of significance. The crenellation pattern on the roof edge appeared in a 1933 photograph, but was not present right after the initial construction, as shown in a photograph dated 1919. The crenellations are still present. The roof structure also appears different in the 1919 and 1933 photographs. In the 1919 photograph, there are no whole logs extending past the building wall, unlike the photograph taken in the 1933, which shows these log extensions. At some point, the exposed rafter tails were sawed off flush with the facades. Steps were added to the original threshold in 1976.

The Guide Shelter is currently being threatened on the north side by the wind scour and sloughing activity of the freeze/thaw cycles of the snow and ice. Areas east and south of shelter have lost approximately 30 feet of tuff due to erosion and from the construction of the helicopter landing pad. Additional stairs and retaining walls were built between 1981 and 1983 to compensate for loss of tuff. Repairs were made to the foundations and walls in the 1970s and 1980s. The concessionaire added a skylight to the interior in the 1960s. ~~Some leakage has occurred around the skylight. The tarpaper roof is damaged, and there is some water damage on roof joists. The window frames have dry rot.~~ *In 2005, the Guide Shelter was restored, this work included: tuck pointing and waterproofing of masonry walls, constructing a new roof, and replacing windows and window frames. The Guild Shelter is currently used as the ranger station.*

NPS Storage Building

Originally constructed around 1936 as a men's pit toilet, the NPS storage building has undergone changes to be converted to a storage facility. The stone masonry parapet wall was removed in 1973. A solar panel roof was added. Waterproofing has been applied to roof exterior. The historic hole in the comfort station has been sealed up. However, the original wood plank floor remains inside. Built on tuff rock, the foundation of the structure is threatened by wind erosion at the corners. The foundation of the north side has been reinforced with poured concrete, though it is not anchored. ~~The doorframe has dry rot.~~ *From 2005 to 2006 the NPS Storage Building was moved approximately 3 feet and reconstructed. The same materials, design, and craftsmanship were used in the reconstruction of the building.*

These three stone structures – the Public Shelter, the Guide Shelter, and the storage building — retain integrity. They are considered contributing landscape features to the historic scene. The other buildings and structures on the site – the Gombu Shelter, the helipad, the Butler Shelter, and the solar and pit toilets – were constructed after the period of significance. They are noncontributing buildings and structures.

3. Condition Assessment and Impacts – Explanatory Notes:

It is proposed that the condition of the historic district remains fair, and that the following changes are made to this section (additional text shown in italics and text to be removed notated by a strikethrough):

Explanatory Notes:

Although work has been completed to stabilize historic buildings, the district remains in fair condition due to the need to stabilize erosion of the site.

4. Condition Assessment and Impacts – Stabilization Measures:

It is proposed that the following changes are made to this section (additional text shown in italics and text to be removed notated by a strikethrough):

Stabilization Measures

The following measures are recommended to stabilize the Camp Muir site and improve its condition:

1) Stabilize erosion of site by formalizing the circulation system with rock-lined paths and new trail tread. Trail tread material will consist of 1 1/2" crushed rock. Rock and gravel will be obtained from a site at Camp Muir.

2) ~~Stabilization measures for the buildings at Camp Muir are covered by the List of Classified Structures (LCS). However, updated descriptions have not been entered into the LCS database as of yet. The needed stabilization measures are described below:~~

~~Public Shelter:~~

~~Re-mortar and waterproof walls. Cracks are present on interior walls. Waterproof coating is peeling.~~

~~Fix torn tarpaper on ceiling. This is causing the roof to leak.~~

~~Remove and replace wood in window frame that has dry rot.~~

~~Improve ventilation inside by installing a ceiling fan.~~

~~Replace exposed roof joists that have dry rot and are weathered.~~

~~Replace stone that has been lost from southeast wing wall.~~

~~NPS Storage Building:~~

~~Replace foundation.~~

~~Reconstruct mortared masonry walls.~~

~~Guide Shelter:~~

~~Fix leak around Plexiglass skylight.~~

~~Remove and replace wood in window frames that have dry rot.~~

~~Re-mortar stone masonry walls.~~

~~Fix damaged tarpaper roof.~~

~~Replace water damaged roof joists.~~

5. Condition Assessment and Impacts – Impact:

It is proposed that the following changes are made to this section (additional text shown in italics and text to be removed notated by a strikethrough):

Type of Impact: Erosion

Internal/External: External

Description:

A combination of natural and human-caused erosion has reduced the elevation of the ridge significantly. Ground erosion also imperils several buildings and a ruin on the site.

Type of Impact: Impending Development

Internal/External: Internal

Description:

Additional development has the potential to further congest the site and compromise its integrity.

Type of Impact: Exposure to Elements

Internal/External: External

Description:

Wind scour and the sloughing activity of the freeze/thaw cycles of the snow and ice are reducing the north and south slopes of the ridge. The Cowlitz Glacier and the Muir Snowfield also are scouring the ridge. This exposure is also degrading the structural integrity of the buildings.

6. Additional Graphics/Maps/Images:

1. Updated photos of restored and reconstructed buildings

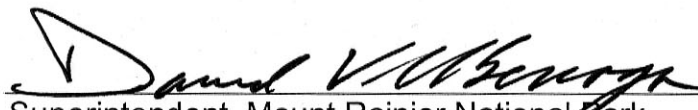
**National Park Service
Cultural Landscape Inventory
2002**

**Camp Muir
Mount Rainier National Park**

Mount Rainier National Park concurs with the management category and condition assessment identified by this CLI Level II report, as given below:

MANAGEMENT CATEGORY: **Should be preserved and maintained**

CONDITION ASSESSMENT: **Fair**


Superintendent, Mount Rainier National Park

3/2/04
Date

Please return to:

Erica Owens
Historical Landscape Architect
National Park Service
Pacific West Regional Office
909 First Avenue
Seattle, WA 98104-1060



STATE OF WASHINGTON

Office of Archaeology and Historic Preservation

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501
(Mailing Address) PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 Fax Number (360) 586-3067

June 18, 2004

Dr. Stephanie Toothman, Chief
National Park Service, Pacific West Region
909 First Avenue, Fifth Floor
Seattle, Washington 98104-1060

In future correspondence please refer to:

Log: 061804-52-NPS

Property: Mt. Rainier, Olympic, and North Cascades National Parks

Re: Formal Concurrence on 12 Cultural Landscape Inventory and List of Classified Structures

Dear Dr. Toothman:

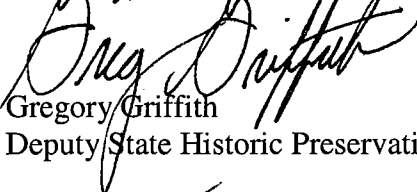
Thank you for contacting the Washington State Office of Archaeology and Historic Preservation (OAHP). The above referenced properties have been reviewed on behalf of the State Historic Preservation Officer (SHPO) under provisions of Section 106 of the National Historic Preservation Act of 1966 (as amended) and 36 CFR Part 800.

Based upon your documentation, I understand that the National Park Service (NPS) requests formal concurrence from the SHPO in order to certify that the Cultural Landscape Inventory (CLI) and List of Classified Structures (LCS) is complete. My review is based upon documentation contained in your documentation.

In response, you will find our concurrence on the 12 CLIs and associated LCS located in Mount Rainier, Olympic and North Cascades National Parks. The documentation prepared for this review will be retained in the Washington State Inventory of Cultural Resources for future reference and research.

Again, thank you for the opportunity to review and comment on these reviews as well as for the assistance and work of Erica Owens. Should you have any questions please feel free to contact me at 360-586-3073 or gregg@cted.wa.gov.

Sincerely,



Gregory Griffith
Deputy State Historic Preservation Officer

Enclosures ✓

JUN 07 2004

Archaeology and
Historic Preservation**CAMP MUIR**
MOUNT RAINIER NATIONAL PARK**Washington SHPO Eligibility Determination**

Section 110 Actions Requested:

- 1) SHPO concurrence with the Setting description, and
- 2) SHPO concurrence with the addition of structures to the List of Classified Structures (LCS). (See chart below)

☒ **I concur,** ☐ **I do not concur** that the **Setting** as described in the Cultural Landscape Inventory (CLI) contributes to the Camp Muir Historic District (The 1997 National Historic Landmark District Nomination describes spatial organization and topography for Camp Muir. This CLI expands the description of those two landscape characteristics and adds descriptions of natural systems and features, land use, and views and vistas. See the Analysis and Evaluation).

The following structures, located within the historic designed landscape, are already listed on the National Register as contributing elements of the Camp Muir Historic District:

LCS number	Structure Name	Park Structure Number
006712	Guide Shelter	PX-202
006711	Public Shelter	P-053
030247	Men's Pit Toilet/NPS storage Shed	PX-302

Based on the information provided in the CLI, the following previously unevaluated structures have been identified as **contributing** to the Camp Muir Historic District:

LCS number	Structure Name	Concur	Do Not Concur
(No number)	Wood and Stone Bench at Public Shelter	☒	
(No number)	Ruin's of Women's Pit Toilet	☒	

Based on the information provided in the CLI, the following structures have been identified as **not contributing** to the Camp Muir Historic District:

LCS number	Structure Name	Concur	Do Not Concur
N/A	Butler Shelter	✓	
N/A	Concessionaire Hut/ Gombu Shelter	✓	
N/A	Helipad	✓	
N/A	Public and Concession Pit/ Solar Toilet	✓	
N/A	Public Pit Toilet	✓	
N/A	Public Solar Toilet	✓	
N/A	Staging Table	✓	

Reasons/comments why any 'Do Not Concur' blocks were checked:

Oregon Dufflitt DSHPO
 FOR Washington State Historic Preservation Officer

6/18/04
 Date

Please return forms to the attention of:
 Erica Owens
 CLI Co-coordinator
 National Park Service
 Pacific West Regional Office-Seattle
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 Seattle, WA 98104
 (206) 220-4128
 erica_owens@nps.gov

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Executive Summary

General Introduction to the CLI

The Cultural Landscapes Inventory (CLI) is a comprehensive inventory of all historically significant landscapes within the National Park System. This evaluated inventory identifies and documents each landscape's location, physical development, significance, National Register of Historic Places eligibility, condition, as well as other valuable information for park management. Inventoried landscapes are listed on, or eligible for, the National Register of Historic Places, or otherwise treated as cultural resources. To automate the inventory, the Cultural Landscapes Automated Inventory Management System (CLAIMS) database was created in 1996. CLAIMS provides an analytical tool for querying information associated with the CLI.

The CLI, like the List of Classified Structures (LCS), assists the National Park Service (NPS) in its efforts to fulfill the identification and management requirements associated with Section 110(a) of the National Historic Preservation Act, NPS Management Policies (2001), and Director's Order #28: Cultural Resource Management (1998). Since launching the CLI nationwide, the NPS, in response to the Government Performance and Results Act (GPRA), is required to report on an annual performance plan that is tied to 6-year strategic plan. The NPS strategic plan has two goals related to cultural landscapes: condition (1a7) and progress on the CLI (1b2b). Because the CLI is the baseline of cultural landscapes in the National Park System, it serves as the vehicle for tracking these goals.

For these reasons, the Park Cultural Landscapes Program considers the completion of the CLI to be a servicewide priority. The information in the CLI is useful at all levels of the park service. At the national and regional levels it is used to inform planning efforts and budget decisions. At the park level, the CLI assists managers to plan, program, and prioritize funds. It is a record of cultural landscape treatment and management decisions and the physical narrative may be used to enhance interpretation programs.

Implementation of the CLI is coordinated on the Region/Support Office level. Each Region/Support Office creates a priority list for CLI work based on park planning needs, proposed development projects, lack of landscape documentation (which adversely affects the preservation or management of the resource), baseline information needs and Region/Support office priorities. This list is updated annually to respond to changing needs and priorities. Completed CLI records are uploaded at the end of the fiscal year to the National Center for Cultural Resources, Park Cultural Landscapes Program in Washington, DC. Only data officially entered into the National Center's CLI database is considered "certified data" for GPRA reporting.

The CLI is completed in a multi-level process with each level corresponding to a specific degree of effort and detail. From Level 0: Park Reconnaissance Survey through Level II: Landscape Analysis and Evaluation, additional information is collected, prior information is refined, and decisions are made regarding if and how to proceed. The relationship between Level 0, I, and II is direct and the CLI for a landscape or component landscape inventory unit is not considered finished until Level II is complete.

A number of steps are involved in completing a Level II inventory record. The process begins when the CLI team meets with park management and staff to clarify the purpose of the CLI and is followed by historical research, documentation, and fieldwork. Information is derived from two efforts: secondary sources that are usually available in the park's or regions' files, libraries, and archives and on-site landscape investigation(s). This information is entered into CLI database as text or graphics. A park report is generated from the database and becomes the vehicle for consultation with the park and the

SHPO/TPO.

Level III: Feature Inventory and Assessment is a distinct inventory level in the CLI and is optional. This level provides an opportunity to inventory and evaluate important landscape features identified at Level II as contributing to the significance of a landscape or component landscape, not listed on the LCS. This level allows for an individual landscape feature to be assessed and the costs associated with treatment recorded.

The ultimate goal of the Park Cultural Landscapes Program is a complete inventory of landscapes, component landscapes, and where appropriate, associated landscape features in the National Park System. The end result, when combined with the LCS, will be an inventory of all physical aspects of any given property.

Relationship between the CLI and a CLR

While there are some similarities, the CLI Level II is not the same as a Cultural Landscape Report (CLR). Using secondary sources, the CLI Level II provides information to establish historic significance by determining whether there are sufficient extant features to convey the property's historic appearance and function. The CLI includes the preliminary identification and analysis to define contributing features, but does not provide the more definitive detail contained within a CLR, which involves more in-depth research, using primary rather than secondary source material.

The CLR is a treatment document and presents recommendations on how to preserve, restore, or rehabilitate the significant landscape and its contributing features based on historical documentation, analysis of existing conditions, and the Secretary of the Interior's standards and guidelines as they apply to the treatment of historic landscapes. The CLI, on the other hand, records impacts to the landscape and condition (good, fair, poor) in consultation with park management. Stabilization costs associated with mitigating impacts may be recorded in the CLI and therefore the CLI may advise on simple and appropriate stabilization measures associated with these costs if that information is not provided elsewhere.

When the park decides to manage and treat an identified cultural landscape, a CLR may be necessary to work through the treatment options and set priorities. A historical landscape architect can assist the park in deciding the appropriate scope of work and an approach for accomplishing the CLR. When minor actions are necessary, a CLI Level II park report may provide sufficient documentation to support the Section 106 compliance process.

Park Information

Park Name:	Mount Rainier National Park
Administrative Unit:	Mount Rainier National Park
Park Organization Code:	9450
Park Alpha Code:	MORA

Property Level And CLI Number

Property Level:	Landscape
Name:	Camp Muir
CLI Identification Number:	400127
Parent Landscape CLI ID Number:	400127

Inventory Summary

Inventory Level:	Level II
-------------------------	----------

Completion Status:

Level 0

Date Data Collected - Level 0:	1/1/1992
Level 0 Recorder:	C. Gilbert
Date Level 0 Entered:	1/1/1992
Level 0 Data Entry Recorder:	C. Gilbert
Level 0 Site Visit:	No

Level II

Date Level II Data Collected:	6/1/2001
Level II Data Collection	K. Vaage, T. Thomas
Date Level II Entered:	3/19/2002
Level II Data Entry Recorder:	Erica Owens
Level II Site Visit:	Yes

Explanatory Narrative:

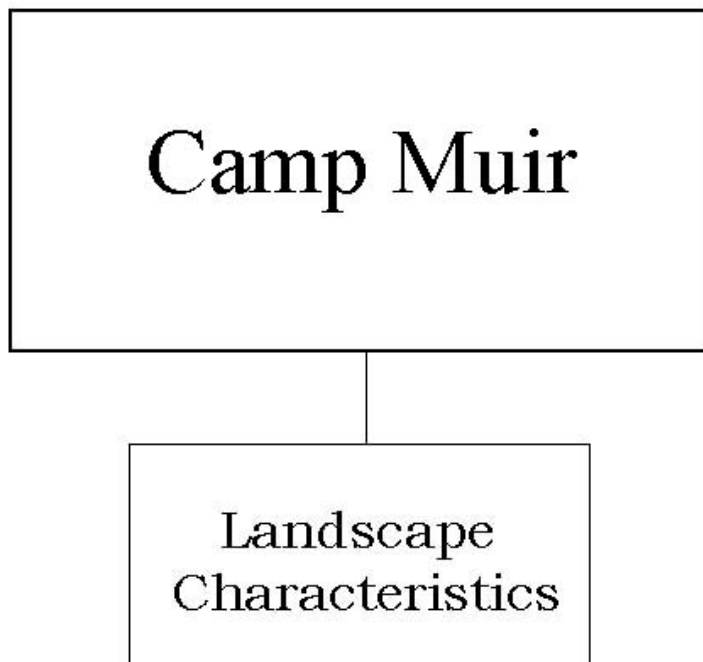
Historic research and fieldwork for the CLI was conducted by Denver Service Center in 2001. The data was entered into the CLI database by Erica Owens in March of 2002.

Landscape Description

Camp Muir, originally known as Cloud Camp, is the primary base camp for ascents to the summit of Mount Rainier. The camp is located on a narrow east-west ridge, or “cleaver,” at 10,188 feet on the Gibraltar route, long known as the most direct route to the summit of the great mountain. The Camp Muir site measures roughly 360 feet long from east to west and varies in width from 60 to 90 feet. The narrowest level part of the ridge is about 15 feet wide. The structures of Camp Muir include overnight shelters, comfort stations, storage, and a cookhouse. Although the site itself is fairly level, the surrounding topography varies greatly. The rock face south of the camp drops 30 vertical feet, from 10,100 feet to 10,070 feet in less than 100 linear feet from the edge of the camp. Camp Muir's period of significance is 1916-1936. The camp is a discontinuous part of Mount Rainier's National Historic Landmark District, which is significant as the best surviving example of an early national park master plan. It is also significant for its association with the early recreational development of the park (criterion A) and for its distinctive method of the Rustic Style of architecture in the stone masonry structures (criterion C).

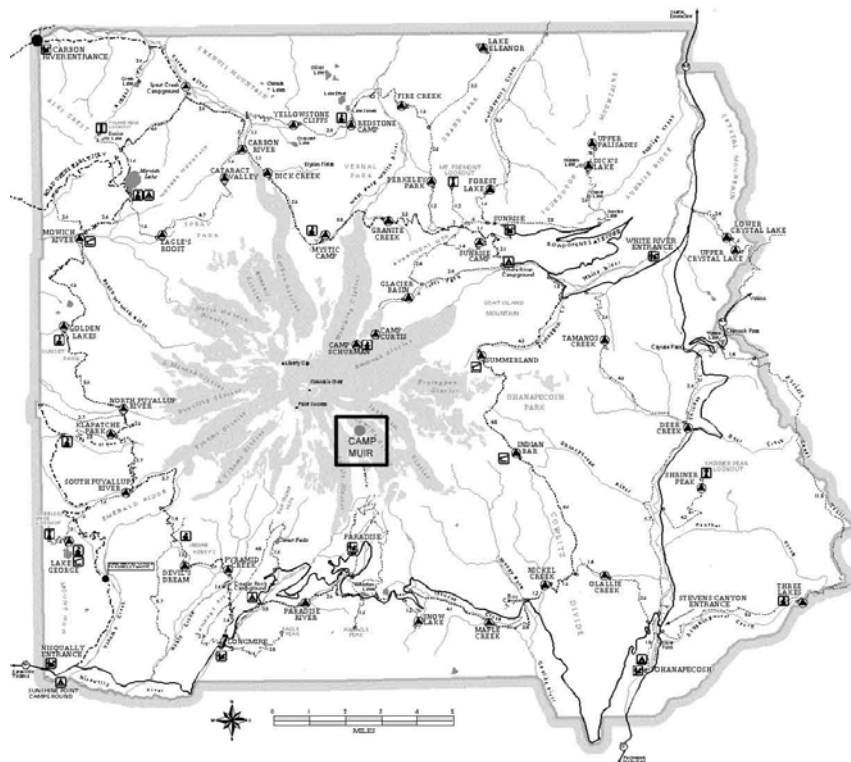
Cultural Landscapes Inventory Hierarchy Description

Camp Muir is a cultural landscape within the Mount Rainier National Historic Landmark District. The site is composed of eight landscape characteristics that contribute to its historic integrity. These characteristics are natural systems and features, topography, buildings and structures, land use, spatial organization, small-scale features, archeological sites, and views and vistas.



CLI hierarchy diagram showing Camp Muir, a cultural landscape composed of landscape characteristics that contribute to its historic integrity. (CCSO, 2002)

Location Map



Camp Muir is located within the boundaries of Mount Rainier National Park, Washington. (Adapted from a MORA trail map, 1998)

Boundary Description

The cultural landscape boundary is defined in the National Historic Landmark District as follows: On the north, the area boundary is the Cowlitz Cleaver; on the south, the edge of the Muir Snowfield; on the east, a north-south line 100 feet east of the public shelter; on the west, a north-south line 100 feet west of the Guide Shelter.

Regional Context

Political Context

Camp Muir is located within the southwestern quarter of Mount Rainier National Park, which is bordered by Mount Baker-Snoqualmie National Forest, Gifford Pinchot National Forest, and Wenatchee National Forest lands.

Physiographic Context

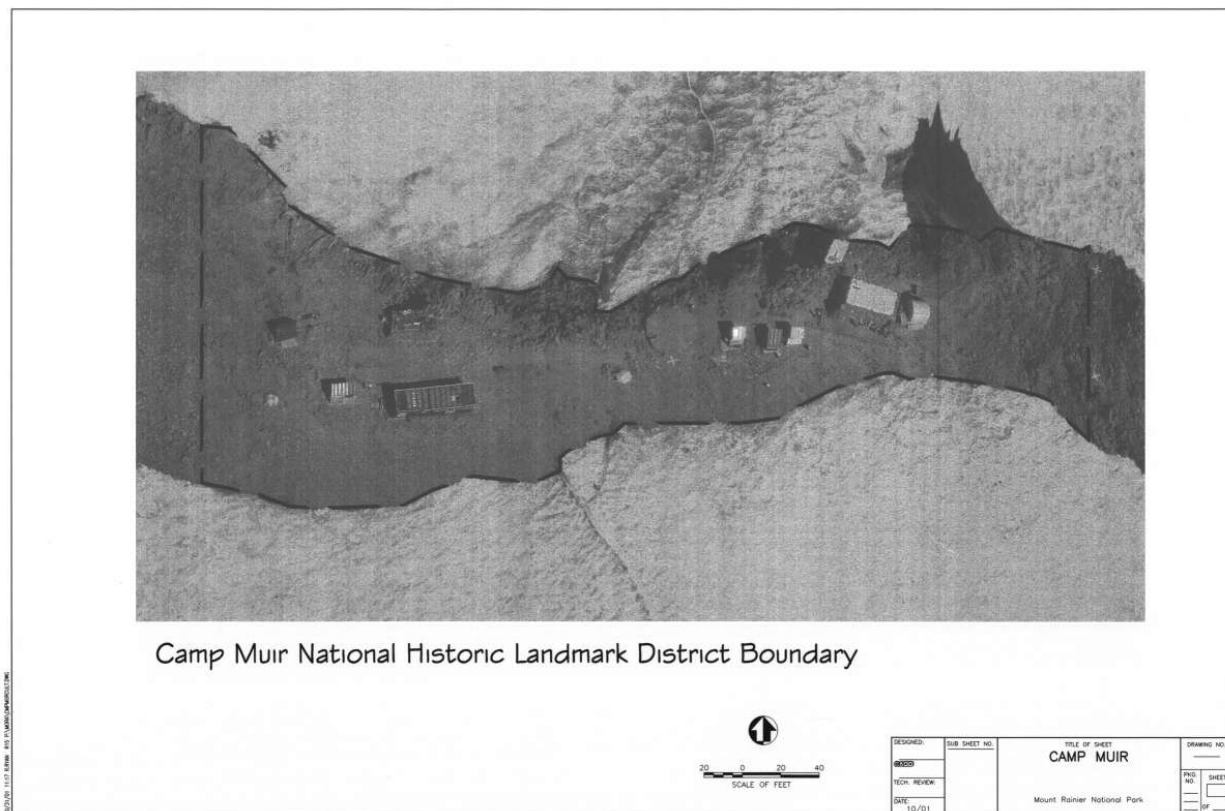
At an elevation of 10,188', Camp Muir is located within a harsh physiographic zone – the perpetual snowfields and glaciers with slope gradients of approximately 50%. Ranging from 7,600' to 14,410' at the summit, perpetual snowfields and glaciers support few plant or animal species. Due to snow and ice mass, plant species are limited to predominantly mosses and lichens. A few grasses and flowering plants can be found in seasonally ice-free areas. Low plant mass limits the number of animal species this zone can support. Observations of marmots, pika, mice and shrews have been made at these high elevations, but are rare. More common are mountain goats that use the high rock fields for travel, observation, and escape (Burtchard 1998, 31).

Cultural Context

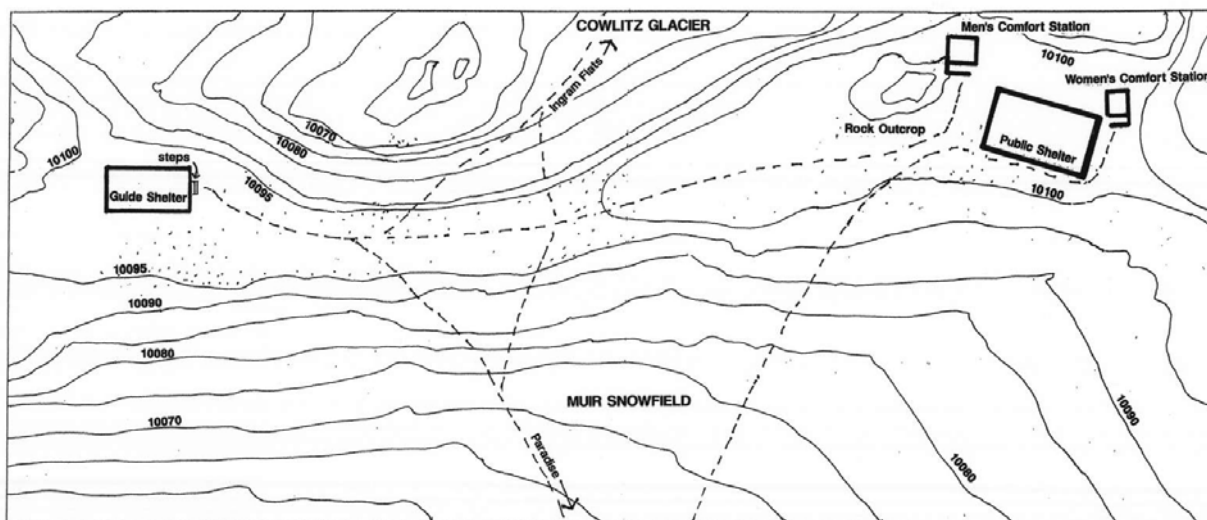
Camp Muir is a campground and resting point between Paradise and Mount Rainier's summit. Located at 10,188', amenities at the campground are limited due to its remoteness and location within the Wilderness Area. Amenities include the public shelter, guide shelter, helicopter landing pad, and solar/pit toilets. The next closest developed area to Camp Muir is Paradise. The campground is accessed from Paradise by a 4.5-mile trail that gains 4600' in elevation. Paradise is a highly developed area of Mount Rainier National Park that offers many amenities to park visitors before they began their ascent to Camp Muir. Hotel, parking, campgrounds, picnic areas, visitor center, and hiking trails are some of the services available.

Site Plan

2001 site diagram showing the National Historic Landmark District Boundary around Camp Muir. (Denver Service Center, 2001)



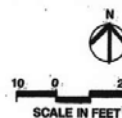
1936 site diagram showing historic conditions. (NPS map, 1936)



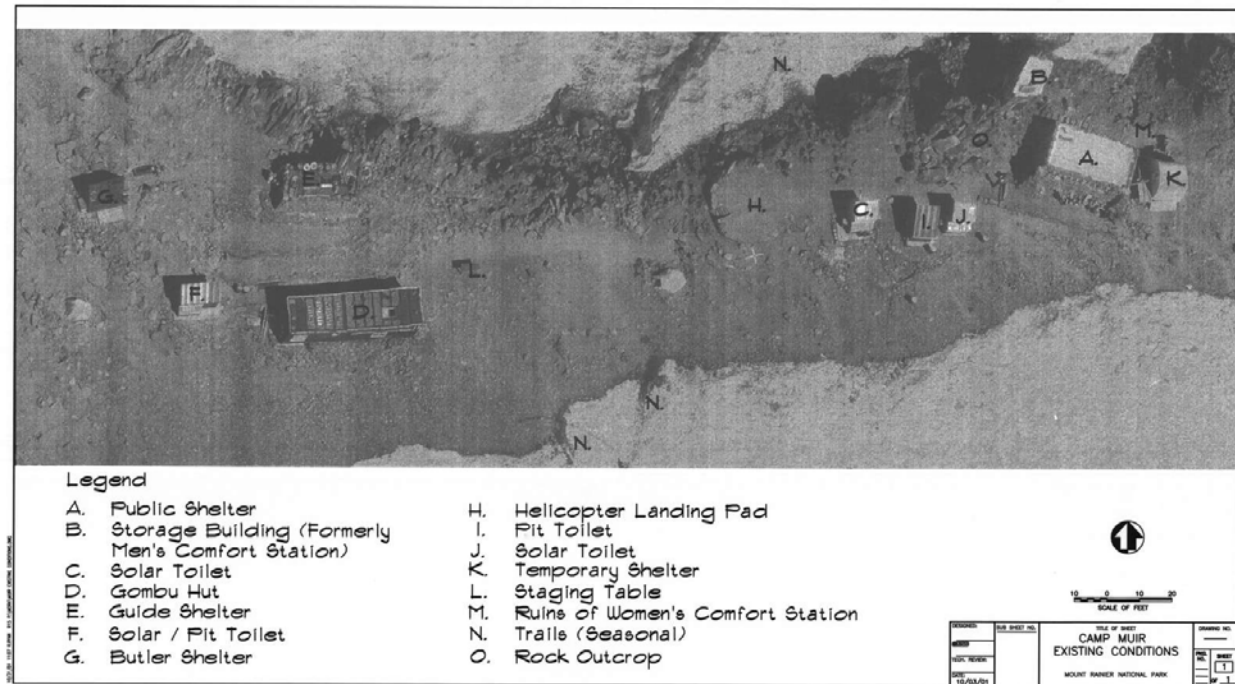
Camp Muir - 1936
Mount Rainier National Park

LEGEND

Circulation



2001 site diagram of existing conditions at Camp Muir. (Denver Service Center, 2001)



Chronology

Year	Event	Description
1888 AD	Established	John Muir chose Cloud Camp, later named Camp Muir, as his campsite during his summit ascent. Muir's climbing partner, E.S. Ingraham, later proposed "Camp Muir" as the name for site. Other: John Muir
1897 AD	Established	The Mazamas Club climb in July 1897 had the first climbing fatality on Mt. Rainier. As a result, a shelter at Camp Muir was recommended.
1907 AD	Established	Eugene Ricksecker of the Army Corps of Engineers suggested that shelters be built at Camp Muir and at the summit of Mt. Rainier.
1911 - 1912 AD	Designed	The Department of the Interior approved the Camp Muir shelter, but it was not built until after John Muir's death in 1914.
1916 AD	Built	The first shelter (PX-202/P-053) was designed by Carl F. Gould, member if the Mountaineers, and constructed. Architect: Carl F. Gould
1921 AD	Memorialized	A second shelter, Public Shelter (PD-301/P-051) was built by the NPS, "Erected in memory of John Muir" with a stone foundation, stone walls partly mortared. The smaller 1916 shelter was set aside as a shelter for guides (Guide Shelter).
1935 AD	Built	Pit toilets (PX-302, men's & PX-303, women's) were built by the Civilian Conservation Corps.
1936 AD	Altered	The Gibraltar Route, a favorite climbing route since 1870, slid away. For the next 10 years alternate routes were used, until the current popular route was established. Use of Camp Muir was reduced during this time.
1950 AD	Altered	The revised Gibraltar route was reopened. Camp Muir was again used as a base camp for climbs to the summit.

1960 - 1979 AD	Damaged	Crowded conditions increased at Camp Muir as day use and climbing grew in popularity.
1963 AD	Planned	A Project Construction Proposal was prepared for a public shelter, ranger quarters, and two pit toilets to replace existing, deteriorated structures.
1966 AD	Altered	Extensive repairs were made to Guide Shelter (P-053).
1968 AD	Altered	The Public Shelter (P-051) was remodeled.
1969 AD	Built	The Butler Shelter, an A-frame climbing ranger shelter was erected. Two new privies were also constructed.
1970 AD	Altered	Work done to upgrade the Guide Hut, Butler Shelter, and both public toilets.
1970 AD	Altered	The interior of the Guide Shelter was remodeled and converted to a kitchen and RMI quarters.
1970 AD	Built	The Guide Cabin/Gombu Shelter (dorm for RMI clients) was built by Rainier Mountaineering Incorporated (RMI).
1970 AD	Built	Pit toilets (PX-302 & PX-303, c.1936) were deemed inadequate. New fiberglass chemical toilets replaced the pit toilets.
1975 AD	Altered	Men's pit toilet (PX-302) was converted to a storage shed. Stone masonry wall screening entrance was removed. Women's pit toilet (PX-303) was removed.
1985 AD	Built	A solar-assisted toilet was installed at Camp Muir.
1988 AD	Built	Privacy screens were installed in front of Camp Muir toilets.
1991 AD	Established	Camp Muir was entered in the National Register of Historic Places as a historic district 3/13/1991.

1994 AD	Eroded	Mid-season report noted that the pit toilet on the public shelter side of the ridge needed to be removed due to erosion.
1994 AD	Demolished	The pit toilets were closed in May and demolished in September.
1995 AD	Altered	Camp Muir solar toilet repairs were completed.
1997 AD	Altered	A Weatherport portable building was purchased to alleviate crowding at the Butler Shelter. It is used for temporary housing and storage. Dismantled at end of the season and stored in the Muir storage shed.
1998 AD	Altered	Minor repairs were made to existing structures and rock walls.
1998 AD	Built	A new solar toilet was constructed in August, except for solar panel on roof. Weatherport structure erected in July, dismantled in September.
1999 AD	Altered	The Weatherport structure served as a temporary shelter from July 12 to September 29. A vestibule of an old solar toilet was removed. The first solar toilet was completed. A second solar toilet was flown to Camp Muir in June.
2000 AD	Built	An RMI solar toilet was prefabricated in June.
2000 AD	Altered	An ADA compliant pit toilet was installed and the RMI combination toilets were completed. Minor rock excavation was undertaken to accommodate an entry path into the RMI solar toilet.

Statement Of Significance

Camp Muir is a discontinuous part of Mount Rainier's National Historic Landmark District, which is significant as the best surviving example of an early national park master plan implemented before World War II. Camp Muir was incorporated into the early national park master plan in the 1920s. The national Historic Landmark District was designated in 1997.

Camp Muir was formerly listed in the National Register of Historic Places in 1991, and was found to be significant for its association with the early recreational development of the park (criterion A). Camp Muir was also found to be significant for its distinctive method of construction and design style (criterion C) as an excellent example of the Rustic Style of architecture in the stone masonry structures.

Camp Muir was developed as an alpine camp with a cluster of stone buildings on relatively level, rocky terraces. A number of landscape characteristics influenced the development of the site or were made through its creation. These characteristics are natural systems and features, topography, buildings and structures, land use, spatial organization, small-scale features, archeological sites, and views and vistas. These characteristics contribute to the significance and integrity of the Camp Muir. Camp Muir's period of significance is 1916 to 1936, the period during which the site was developed, and the period to which the remaining landscape characteristics date.

Physical History

1888-1915

Camp Muir, originally known as Cloud Camp, is the primary base camp for ascents to the summit of Mount Rainier. The camp is located on a narrow east-west ridge, or “cleaver,” at 10,000 feet on the Gibraltar route, long known as the most direct route to the summit of the great mountain. It was this route that John Muir, the founder of the Sierra Club, followed in his 1888 climb to the summit with Seattle mountaineer Edward S. Ingraham. Ingraham later proposed changing the site’s name to Camp Muir. Muir himself recommended the site because of the pumice deposits found there. Muir believed that the pumice deposits indicated that the site provided shelter from the high winds that battered the mountain’s higher elevations.

Climbing became increasingly popular in the years following Muir’s successful summit attempt. The Oregon Alpine Club climbed Mount Rainier in 1889. Fay Fuller became the first woman to reach the summit with her climb in 1889. The Mazamas, a Seattle climbing club, ascended the peak in 1897. Mountaineering grew in popularity at Mount Rainier, but the first climbing fatality in 1897 awakened climbing advocates to the sport’s inherent dangers and prompted calls for the construction of a high-elevation shelter for climbing parties. A decade later the Army Corps of Engineers recommended the construction of a shelter at Camp Muir, funded in part by private donations. The photographer Asahel Curtis helped organize a Committee of Mountaineers in Mount Rainier National Park advocated the construction of the climbers’ shelter. The Department of the Interior approved the shelter project in 1911, but plans for the project did not get underway until after John Muir’s death in 1914, after which the shelter project moved ahead as a memorial to the wilderness advocate.

1916-1942

The first climbers’ shelter, later known as the Guide Shelter, was completed in 1916, the result of a joint agreement between the National Park Service and the Mountaineers, a Seattle climbing organization. Seattle architect Carl F. Gould, a member of the Mountaineers, provided the plans for the structure. The small building was constructed of dry-stone rubble walls 2 to 3 feet thick; the interior walls were covered with cement mortar. The roof was a nearly flat, tar and gravel roof with exposed whole log rafters. The exterior rock walls currently are mortared, but historic photographs indicate that the walls originally were dry-stacked. The foundation was concrete and stone rubble. Rough stone rubble steps led to the front door. Two small windows were located on the south exposure. The interior dimensions were 8 feet by 20 feet; the 7.5 feet ceiling had exposed joists. The one-room interior was built with a concrete floor and contained two bunk beds and a small kitchen.

In 1921 the National Park Service built a second, larger structure at Camp Muir. This building, “erected in memory of John Muir”, was a stone masonry one-room structure similar in design and materials but nearly twice the size of the first shelter. The walls were built of dry-stone rubble, 18 inches thick with stucco interior. The roof was flat tar and gravel with exposed whole log rafters. Finials defined the roofline. The original door opened in the south wall. This doorway remained at least until the early 1940s. The original door was later sealed and a new doorway was built in the west wall. Two small windows were on either side of the door; a third small window opened in the west wall. This window was removed when the doorway was relocated in the west wall. A stone rubble step led to the door, which was flanked by small stone and wood benches under the windows. The interior dimensions were 12 feet by 25 feet; wood bunk platforms provided space for overnight campers. The new building

provided public shelter; the original building was then designated for mountaineering guides.

These two shelters remained the only two structures at Camp Muir for the next 15 years. Between 1935 and 1936, the Civilian Conservation Corps (CCC) built two pit toilets at the site. Like the first two climbers' shelters, the pit toilets were constructed of dry-stone rubble found at the site, with whole log rafters and flat roofs. The log rafters were later replaced with 2-inch x 4-inch dimensional lumber. The foundation was concrete slab on grade. A stone parapet wall was located in front of each pit toilet building to provide privacy screening. The pit toilets were the first sanitary facilities provided for climbers along the Gibraltar route. The disposal of human waste ultimately would become the most difficult issue of high-elevation visitor use for park management.

Shortly after the pit toilets were constructed, a large ledge on the Gibraltar route collapsed. Climbers for some time had commented on the instability of the rock face of the Gibraltar route, and with this incident, the park staff decided to close the route to climbers. The route was not reopened until 1950.



Historic photograph of the Guide Shelter, 1919. Note the roof line and topography. MORA Archive (twc473)



Historic photograph of the second constructed shelter, the Public Shelter, 1929. Note benches and crenellations on the roof line. MORA Archive (twc502)



Historic photograph of climbers at the Guide House, 1933. Note the flat roof line. MORA Archive (twc475)

1950-1970

Climbing on Mount Rainier increased gradually between 1950 and 1970, but after 1970 the popularity of climbing grew dramatically. In 1950, fewer than 500 climbers attempted the summit of Mount Rainier; by 1970 the number had grown to over 2,000. Twenty years later, almost 10,000 climbers were ascending the mountain. The greater number of users put enormous pressure on the facilities available at Camp Muir.

Site surveys in the early 1960s recorded deteriorating conditions at the camp, resulting from a combination of natural and human forces. The structural integrity of the guide and public shelters had declined as a result of surface erosion and glacial scouring:

"Major deficiencies of both structures is [sic] the condition of the masonry walls. Buttresses on the southwest side of the shelter cabin and the wall on the northeast side of the guide shelter are both crumbling. There has been an attempt to repair the guide shelter in the recent past by mortaring in the rock wall that is crumbling. Although this mortar is holding, the basic problem comes from the condition of the ridge underneath the shelter. The ridge is constantly falling away due to the action of the adjacent glacier. An ultimate solution to the problem can only be achieved by moving the guide shelter" ("Major Repairs", no date).

Another structural problem was roof damage caused by climbers walking on the roofs of the shelters while wearing crampons.

After surveys of existing conditions in 1962, 1963, and 1966, the facilities at Camp Muir were upgraded to respond to structural deterioration and increasing visitor use. The park reported that 1,300 climbers had registered for summit attempts in 1966, a 45 percent increase over a three-year period. To accommodate increasing climber pressure, the Guide Shelter was repaired in 1966, the Public Shelter was remodeled in 1968. The Gombu Shelter, a 40-foot x 11-foot boxlike plywood structure with a flat roof, was built around 1968. The A-frame Butler Shelter was built in 1969. This shelter, a plywood building with a stone foundation and a single door opening on the east, was constructed for NPS mountaineering rangers.

In 1970, the National Park Service authorized a commercial guide service, Rainier Mountaineering Incorporated (RMI), to remodel the Guide Shelter and convert it for use as a kitchen and quarters for RMI staff. That same year, the park replaced the CCC pit toilets with new fiberglass chemical toilets. Unlike the old latrine system, which merely dumped human waste down slope onto the Cowlitz Glacier (Catton 1996, 585), the new system removed sewage from the site entirely. Once a season, the park staff removed solid wastes from the new toilets, and the waste placed in barrels for transport by helicopter (Catton 1996, 586). The original CCC pit toilets were not removed.



Historic photograph, showing development by 1970. MORA Archive (twc513)

1972-1984

In 1972 the Seattle-based architectural/engineering firm John Morse and Associates conducted a comprehensive survey of the site's existing conditions. The firm's site evaluation highlighted the complexities of maintaining a visitor facility in such a harsh, exposed environment. As part of the survey, Morse researchers developed what was thought to be the first map that showed the exact orientations and spacing of the various structures. Similarly, the study team found no topographic records of the site with which to chart rates of erosion. Their observations of Camp Muir, however, made clear the dynamic character of the site. "The regular topographic transitions which one associates with conventional topo lines do not exist in much of the site.... It is obvious that a topo survey today will not match one tomorrow – especially in this eroding situation" (Morse 1973, 27). A ranger reported to the team that in 1968, four years earlier, he had been able to walk "on the level" around the north side of the guide shelter. "Now the north slope of the ridge here has fallen into the Cowlitz Glacier enough so that the northeast corner of the hut is actually undermined". The team noted several factors were undermining the physical integrity of the site. The open joints of the surface rock made it particularly vulnerable to frost wedging from freezing and thawing; foot traffic from increasing numbers of hikers and climbers had contributed greatly to surface erosion. Perhaps most significantly, the Cowlitz Glacier on the north and the Muir Snowfield on the south were noted to be continually scouring both sides of the rocky ridge. The team noted that seismic activity also posed potential impacts on the site, but did not include specific seismic data.

The team evaluated the camp's geologic features, including the quality of the surface rock. "At the location of present structures most of the rock is clinker-like and of quite poor quality, whereas, the rock on the high portions of the spur on both sides of the building area is fair to good". Some of the loose surface pumice stone was used in the landscape, either arranged to define path edges or used to construct low walls and stable terraces. (The existing conditions report prepared by Morse and Associates incorrectly concluded that the low walls at the site had been constructed to provide windbreaks for sleeping places.) These walls were found between the Gombu Shelter and the Guide Shelter, around the helicopter-landing pad, below the Butler Shelter and the south wall of the Public Shelter, and below the solar and pit toilets. This work was performed by park staff during the 1970s.

The severe weather at the site contributed to the erosive effects of glacial activity and human use. Weather conditions at Camp Muir varied dramatically in both summer and winter; winds speeds occasionally exceed 70 mph, blowing snow through cracks in the structures and creating drifts that leave thick ice deposits in the building interiors. The high winds also scoured out the fine pumice that covered the surface of the site, further undermining the structures. Ironically, the study team identified the pumice surface, once cited by John Muir as evidence of the camp's sheltered and stable qualities, as one of the primary causes of continued instability and deterioration of the site. The report cited a 1968 ranger memo that identified the loose pumice soil as a persistent threat to the structural integrity of the Guide Shelter. The team estimated that erosion had removed about 18 inches of pumice from the surface of the site since the first structures were built.

In addition to the problems of maintaining structures in this harsh environment, park officials also faced the challenge of providing basic services for rangers, guides, and climbers. The Morse study team proposed preliminary suggestions for building materials, water supplies, and sewage disposal to help park officials cope with the enormous increase in visitor pressure. The team determined that native rock from slides in the vicinity of Camp Muir would be adequate material for future construction. However, the problems of water and sewage disposal were more complicated. The team determined that permafrost made drilling for camp drinking water impractical. The researchers said that snowmelt from the Muir

Snowfield might be tapped to provide small quantities of water for the camp.

Despite the construction of the new chemical pit toilets, sewage disposal continued to pose a dilemma for park management. The Morse team considered the installation of sewage facilities similar to those used on the North Slope of Alaska as a solution. The study ultimately rejected this idea, concluding “sophisticated systems such as these would not be practicable, considering the limited availability of water, lack of power, and the fact that almost all users would have no experience with the systems or understand their requirements and limitations” (Morse 1973, 10). The team was unable to propose a viable, long-term solution to the problem of human waste disposal at the camp.

In 1973 the men’s stone CCC pit toilet was converted for use as a storage shed. The women’s facility was removed, along with the stone masonry wall that screened the entrances of both pit toilets. The NPS began to prepare a comprehensive design for a new shelter at Camp Muir, but this project was shelved largely due to the excessive costs, particularly for “engineering studies of alternate specialized water and sewage systems” (Denver Service Center, “Comprehensive Design, Camp Muir Shelter” 1973).

The problem of human waste disposal intensified as interest in climbing grew over the next decade. Visitor use of Camp Muir increased to 4,790 in 1973, tripling the number from 10 years before (Catton 1996, 585). Of that number, 3,000 stayed overnight. The rise in climber and hiker use accelerated dramatically throughout the rest of the 1970s and into the 1980s, peaking in 1982 at nearly 9,000 climbers (“Climbing Use” 1950-1992; “Mount Rainier Wilderness Management Plan” 1989-1992). Although a 1980 climbing survey revealed that most climbers did not feel that the mountain was too crowded, the growing effects of increasing use became impossible to ignore. As the number of climbers increased, so did visitor complaints about sanitation and the likelihood of encountering human waste deposits on the mountain.

The volume of waste removal from Camp Muir almost tripled between 1976 and 1982 (“1985 Solar Assisted Composting Toilet – Camp Muir” 1985). Temporary vault toilets were flown to Camp Muir in 1978. Park officials responded to the growing environmental crisis posed by human waste, which was indicated as a cause of higher bacteria counts in stream runoff, by developing a more comprehensive waste management program for the climbing camps on the mountain (Catton 1996, 586). The waste management program continued the helicopter transport of human waste from Camp Muir. A permanent helicopter-landing pad was built in 1984. The landing pad is a roughly circular area, approximately 25 feet in diameter, located near the center of the site, about 70 feet west of the public shelter near the pit and solar toilets. Rubble stone walls stabilize the north, west, and south edges; stone steps descend from the pad on the western side.

In addition, a public education program informed visitors of the scope of the problem, and park staff distributed sanitary “blue bags” for the transport and disposal of waste. In the summer of 1984, the NPS built a solar-assisted composting toilet at Camp Muir near the Public Shelter. The experimental system, the first of its kind used in the Cascades, was designed to separate liquids from solids and evaporate liquid waste using passive solar energy. The additional sanitary support was urgently needed at the site. In the 1984 climbing season, 4,537 people registered to climb to the summit via Camp Muir (Catton 1996, 586).

1985-present

Climbing numbers declined for the next several years; not until 1990 did they again reach the level seen in 1982. Waste management remained a priority for park staff at Camp Muir. The experimental solar

toilet proved a qualified success for the park. There were ongoing concerns about the system's efficiency in dealing with liquid waste. Some changes were made to the infrastructure at Camp Muir. New solar toilets were added between 1996 and 1999, and the park instituted the use of a temporary structure, the Weatherport portable building, to alleviate crowding in the Butler Shelter.

Today, the Camp Muir site measures roughly 360 feet long from east to west and varies in width from 60 to 90 feet. The narrowest level part of the ridge is about 15 feet wide. Although the site itself is fairly level, the surrounding topography varies greatly. The rock face south of the camp drops 30 vertical feet, from 10,100 feet to 10,070 feet in less than 100 linear feet from the edge of the camp. Freezing, thawing, and increasing amounts of foot traffic contribute to the erosion of the surface of the cleaver. The Cowlitz Glacier on the north and the Muir Snowfield on the south are scouring the sides of the cleaver. The poor quality of rock found throughout the site makes the area particularly vulnerable to erosion.



Contemporary photograph of Camp Muir, 2001. NPS Photo

Analysis And Evaluation

Summary

Camp Muir retains integrity in the following landscape characteristics: natural systems and features, topography, land use, spatial organization, buildings and structures, small scale features, archeological sites, and views. The natural systems and features had a great influence regarding the site selection and development of Camp Muir. It is probable that several structures were built near a rock outcrop to take advantage of the protection it could offer from the harsh environment. The natural systems have also contributed to the degradation of the site. Degradation, a combination of natural and human-caused erosion, has reduced the ridge significantly, but a portion of the topography still retains integrity. Ground erosion imperils several structures. Existing stone has been used to help stabilize the structures and site. This stone has also been used as a building material for several structures on the site.

The principal historical land use associated with this landscape was as a high-elevation campsite for climbing expeditions via the Gibraltar route. Even with the addition of structures after the period of significance, Camp Muir still retains land use integrity. However, the addition of the structures has compromised the historic views within the site. The spatial organization is made up of two building clusters connected by pedestrian paths, as well as site ingress and egress circulation. This organization of the site is still recognizable in the form it had during the period of significance and retains integrity. The addition of the helipad and toilets has altered the original linear site circulation. Therefore, circulation has no integrity, with the exception of a small portion of a path that remains near the southwest corner of the public shelter.

The buildings at Camp Muir are all associated with the operations of a high-elevation campsite. Three stone structures retain integrity and contribute to the historic scene. The ruins of the women's comfort station also contribute to the historic scene as an archeological site.

Overall, the Camp Muir cultural landscape retains integrity as a historic high-elevation campsite. Individual components may be missing, deteriorated, or altered, but the system as a whole remains recognizable and continues to convey its significance.

Landscape Characteristics And Features

Natural Systems And Features

The natural systems and features of the area greatly influenced the site selection and development of Camp Muir. The camp rests on a relatively level and narrow east-west ridge near the summit, which separates the Cowlitz Glacier on the north from Muir Snowfield on the Nisqually Glacier to the south. The aspect and elevation allow for snow-free conditions typically in late August and September. This ridge at one time was capped by a fractured, more resistant flow rock, which makes up the building stone used for various buildings, retaining walls, and the helicopter-landing pad.

Unfortunately, the natural systems are also causing the degradation of the buildings, as is the topography of Camp Muir. The site lies on the south (windward) side of Mount Rainier, but it also catches occasional northeasterly cold gales that sweep up the Cowlitz Glacier. Wind scour and the sloughing activity of the freeze/thaw cycles of the snow and ice are reducing the north and south slopes of the ridge. The Cowlitz Glacier and the Muir Snowfield are also scouring the ridge, with the Cowlitz Glacier being the most active. Volcanic tuff, which was once covered by cap rock, is now exposed to the natural and constructed elements. Ground surface erosion imperils the Guide Shelter, the historic men's pit toilet,

and the historic ruins of the women's pit toilet. High winds carry the disturbed pumice surface away and expose a new surface to be disturbed by climbers, and the erosion process continues. This human impact has been concentrated through the middle portion of the ridge, where flow rock is absent.

Historic photographs indicate that a rock outcrop existed just northwest of the Public Shelter and the men's pit toilet. The buildings were sited to take advantage of the protection that this landscape feature could provide from the harsh climate. This rock outcrop still exists and contributes to the historic integrity of the site.

Steep, rocky slopes and ridges characterize the natural topography of the area, with Camp Muir resting on a comparatively level, rocky east-west ridge at 10,188 ft in elevation. The summit elevation is 14,410 feet.

In summary, natural systems and features greatly influenced the development of Camp Muir and still contribute to the significance of the site. These systems and features include the overall east-west orientation of the ridge, the geology of exposed bedrock, the slope of the saddle in the middle of the ridge, and a large rock outcrop immediately west of the Public Shelter.



Historic photograph of Cowlitz Cleaver and Camp Muir from Cowlitz Glacier. 1971. MORA Archive (is1905)

Characteristic Feature	Type Of Contribution	LCS Structure Name	IDLCS Number	Structure Number
Center saddle area	Contributing			
East-west ridge	Contributing			

Rock out-crop

Contributing

Topography

Steep, rocky slopes and ridges characterize the natural topography of the area, with Camp Muir resting on a comparatively level, rocky east-west ridge at 10,188 ft in elevation. The summit elevation is 14,410 feet.

Degradation, a combination of natural and human caused erosion, has reduced the elevation of the ridge significantly. A topographic survey completed in September 2000 indicated that the elevation of the area from the entrance door of the Guide Shelter had dropped roughly 15 feet since 1919. In a historic photo from 1919, the topography appears level at the entrance door to the Guide Shelter, but at present it is necessary to climb an extensive buildup of stone steps to reach the entrance door. Most of the surface substrate loss occurred after the 1970s, as can be seen by comparing a photograph dated 1970–1973 to a photograph of the current existing condition. The construction of the helipad in 1984 and the dramatic increase in the popularity of climbing in the 1970s have exacerbated the loss of surface substrate since the 1970s. This extensive loss of surface substrate is not typical throughout the site. The relatively level area between the helipad and the Public Shelter retains integrity, as does the level terrace south of the Public Shelter. These two areas are the only contributing landscape features of topography, i.e. the only topography that has remained relatively unchanged since the period of significance.



Historic photograph of the narrow ridge on which Camp Muir was sited, mid-1960s. MORA Archive (twc506)



Contemporary photograph of the narrow ridge on which Camp Muir is sited. NPS Photo

Characteristic Feature	Type Of Contribution	LCS Structure Name	IDLCS Number	Structure Number
Relatively level area between helipad and Public Shelter	Contributing			
Terrace on south of Public Shelter	Contributing			

Buildings And Structures

The buildings at Camp Muir are all associated with the operation of a high-elevation campsite. This includes overnight shelters, comfort stations, storage, and a cookhouse. Buildings dating from the period of significance are the Guide Shelter, designed by Carl F. Gould (a Seattle architect and a member of the Mountaineers), which was constructed in 1916; the Public Shelter, designed by the National Park Service and constructed in 1921; and the storage building (formerly the men's pit toilet), which was designed by the National Park Service and built by the Civilian Conservation Corps in 1935–1936.

The architectural character of the historic shelters at Camp Muir reflects the philosophy and design features of the rustic style of architecture. The structures are low profile with almost flat rooflines and are of stone masonry construction. They echo the rocky terrain of the Cowlitz Cleaver and serve as a practical accommodation to the severe environment. The 1997 National Historic Landmark District nomination form describes the structures at Camp Muir as follows:

“The randomly coursed masonry of stone harvested from nearby slopes created an almost camouflage effect. The flat roofs kept the building profiles low, and projecting beams evoke a pseudo-ethnographic architectural image”.

Public Shelter

Changes have been made to the Public Shelter since the period of significance. The original entrance door on the south wall of the building was blocked with mortar and small stones, and a new entrance door was constructed on the west side of the building in the opening originally occupied by a window. Snow buildup and wind probably necessitated these changes. The construction took place sometime after 1942, as illustrated by historic photographs. Other architectural changes were the loss of crenellations from the edge of the roof and the loss of finials from the tops of the wing walls. The crenellation pattern did not appear on the original blueprints of 1921, but photographs dated 1929 do show the building with crenellations. Mortar has been placed in the joints to strengthen the walls. The threshold has a contemporary poured concrete pad with inset stones. The flooring inside is also contemporary poured concrete. Concrete has also been poured along the rear façade to reinforce the foundation. The retaining structure has been rebuilt.

The Public Shelter shows evidence of exposure to the harsh elements. Tarpaper on the ceiling is torn causing the roof to leak. The window framing has dry rot. Ventilation inside is poor. The walls need to be re-mortared as cracks are present on interior walls. The waterproof coating is peeling. Exposed roof joists are dry and weathered. Stone has been lost from southeast wing wall.

Guide Shelter

Changes have also been made to the Guide House since the period of significance. The crenellation pattern on the roof edge appeared in a 1933 photograph, but was not present right after the initial construction, as shown in a photograph dated 1919. The crenellations are still present. The roof structure also appears different in the 1919 and 1933 photographs. In the 1919 photograph, there are no whole logs extending past the building wall, unlike the photograph taken in the 1933, which shows these log extensions. At some point, the exposed rafter tails were sawed off flush with the facades. Steps were added to the original threshold in 1976.

The Guide Shelter is currently being threatened on the north side by the wind scour and sloughing activity of the freeze/thaw cycles of the snow and ice. Areas east and south of shelter have lost

approximately 30 feet of tuff due to erosion and from the construction of the helicopter landing pad. Additional stairs and retaining walls were built between 1981 and 1983 to compensate for loss of tuff. Repairs were made to the foundations and walls in the 1970s and 1980s. The concessionaire added a skylight to the interior in the 1960s. Some leakage has occurred around the skylight. The tarpaper roof is damaged, and there is some water damage on roof joists. The window frames have dry rot.

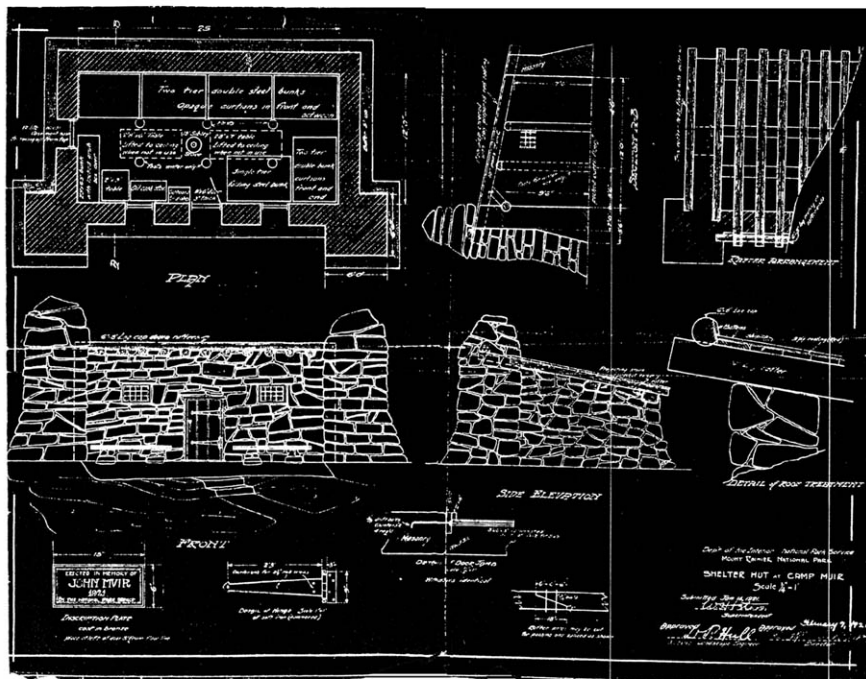
NPS Storage Building

Originally constructed around 1936 as a men's pit toilet, the NPS storage building has undergone changes to be converted to a storage facility. The stone masonry parapet wall was removed in 1973. A solar panel roof was added. Waterproofing has been applied to roof exterior. The historic hole in the comfort station has been sealed up. However, the original wood plank floor remains inside. Built on tuff rock, the foundation of the structure is threatened by wind erosion at the corners. The foundation of the north side has been reinforced with poured concrete, though it is not anchored. The doorframe has dry rot.

These three stone structures – the Public Shelter, the Guide Shelter, and the storage building — retain integrity. They are considered contributing landscape features to the historic scene. The other buildings and structures on the site – the Gombu Shelter, the helipad, the Butler Shelter, and the solar and pit toilets – were constructed after the period of significance. They are noncontributing buildings and structures.



Historic photograph of the men's pit toilet, 1962. Converted for use as a storage shed in 1973. Note the stone masonry parapet wall in front of the door, which was removed in 1973. MORA Archive (muir8)



Historic plans for the Public Shelter, 1921. CCSO archives



Historic photograph of the Guide Shelter, 1962. Note the dry-laid masonry walls. MORA Archive (muir1)



Contemporary photograph of the Public Shelter, 2001. Note the rock outcropping and the loss of finials from the tops of the wing walls. NPS Photo



Contemporary photograph of the Butler Shelter, 2001. Note the stone abutment below the shelter. NPS Photo



Contemporary photograph of pit toilet near the Public Shelter, 2001. NPS Photo



Contemporary photograph of the storage shed (former men's pit toilet), 2001. NPS Photo



Contemporary photograph of the Public Shelter. Note the blocked in historic door at the far left of the photograph, taken 2001. Note the exposed whole log rafter tails, a character defining feature of the Public Shelter. NPS Photo



Historic photograph of the Public Shelter, 1942. Note the original door on the south side and finials on top of wing walls. Also note the terrace on the south side (front) of shelter, with benches. MORA Archive (is173)



Contemporary photograph of the Gombu Shelter, Guide Shelter, Butler Shelter, and Pit Toilet, 2001. Also note the retaining walls built on the downhill sides of the Gombu Shelter, Guide Shelter, and Butler Shelter. NPS Photo

Characteristic Feature	Type Of Contribution	LCS Structure Name	IDLCS Number	Structure Number
Guide Shelter	Contributing	Camp Muir Guide House (Shelter)	006712	PX-202
Men's pit toilet/NPS Storage Shed	Contributing			
Public Shelter	Contributing			
Butler Shelter	Non-Contributing			
Concession Hut/ Gombu Shelter	Non-Contributing			
Helipad	Non-Contributing			
Public and Concession Pit/Solar toilet	Non-Contributing			
Public Pit Toilet	Non-Contributing			
Public Solar Toilet	Non-Contributing			

Land Use

The principal historic land use associated with this landscape was its use as a high-elevation campsite for climbing expeditions via the Gibraltar route. After the first climbing fatality in 1897, climbing advocates prompted calls for the construction of a high-elevation overnight shelter. The climbers' shelter, later known as the Guide Shelter, was completed in 1916, the result of a joint agreement between the National Park Service and the Mountaineers.

The National Park Service built a second, larger structure at Camp Muir in 1921. This structure provided public shelter; the original building was designated for mountaineering guides. These two buildings were anchored at opposite ends of the site, the Guide Shelter on the west end and the Public Shelter on the east. The guide service used the Guide Shelter for sleeping, cooking and storage and the park visitors used the Public Shelter for sleeping and cooking. Between 1935 and 1936, the Civilian Conservation Corps built two pit toilets near the Public Shelter. A terrace with a southern exposure adjacent to the Public Shelter was used for sitting and warming. The open area between these two ends, or "nodes," functioned as a common space.

Camp Muir today serves as a high-elevation campsite for climbing expeditions. Even with the addition of several structures and a helipad constructed after the period of significance, the historic patterns of land use remain the same. The two nodes, which serve as visitor service areas, function as they did historically, as does the common open space between them.

Overall, Camp Muir retains integrity of land use.



Historic photograph of climbers at the Public Shelter, 1929. Note the rock outcropping and trail. MORA Archive (twc499)

Small Scale Features

The wood and stone bench on the south side of the public shelter was constructed after the south entrance door was blocked off. Before this change, two benches sat on either side of the original entrance door on the south side of the building, as seen in the 1929 photograph. The existing bench design mimics the original design, with wood seats laid across stone pedestals. Even though the existing bench is probably a reconstruction, the design, materials, and location are so similar to the original, the existing bench may be partially historic and should be managed as a cultural resource.

The adaptation of using the existing stone to help stabilize the site and buildings is due to a response to the natural systems. There is only one abutment structure on the south side of the Public Shelter that appears in photographs during the period of significance. This is a contributing landscape feature. All other abutments and retaining walls are contributing landscape features, but are compatible with the historic character of the site.

The wood staging table was not present during the period of significance and is a non-contributing feature.



Contemporary photograph of the Public Shelter, 2001. Note the historic sign at the far left side of photo above the blocked in historic doorway. A wood and stone bench is located under the snow drift, above the rock retaining wall.
NPS Photo

Characteristic Feature	Type Of Contribution	LCS Structure Name	IDLCS Number	Structure Number
Stone retaining wall on south side of Public Shelter.	Contributing			

Wood and stone bench at Public Shelter	Contributing
All other retaining walls	Non-Contributing
Staging table	Non-Contributing

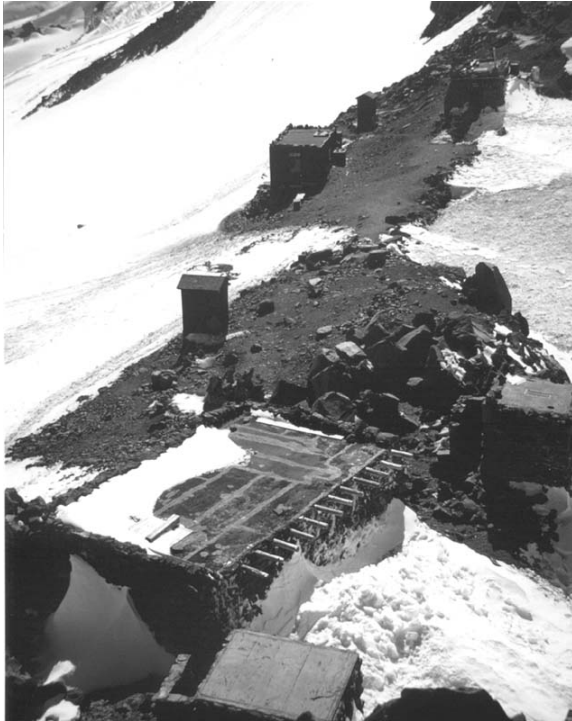
Views And Vistas

Panoramic views from Camp Muir of the surrounding mountain ranges and region strongly influence the character of the cultural landscape. These include the southerly views from the bench at the Public Shelter, views to the north and south from the entrance to the Guide Shelter, and views to the north and south from middle point of Camp Muir. These unhindered views are just as astounding today as they were during the period of significance and retain integrity.

Characteristic Feature	Type Of Contribution	LCS Structure Name	IDLCS Number	Structure Number
Views to the north and south from the middle point of Camp Muir.	Contributing			
Views from the bench at the Public Shelter.	Contributing			
Views to the north and south from the entrance door at the Guide Shelter.	Contributing			

Archeological Sites

The ruins of the women's pit toilet, which was constructed in 1935–1936, consist of three mortared walls approximately 3 feet high. Erosion has taken a toll on the ruin. A photo from the early 1970s, shows the building in its entirety. It was dismantled in 1973. This ruin is a contributing archeological site dating from the period of significance.



Historic photograph of Camp Muir, 1970-73. Note the women's pit toilet at the bottom of the photo. MORA Archive (twc513)



Contemporary photograph of the ruins of the women's pit toilet, 2001. Also note the rear wall of the Public Shelter showing mortar applied to the stone after the period of significance, and the Weatherport behind. NPS Photo

Characteristic Feature	Type Of Contribution	LCS Structure Name	IDLCS Number	Structure Number
Ruins of women's pit toilet	Contributing			

Spatial Organization

During the period of significance, two nodes were developed at opposite ends of the site. A building cluster, which included the Public Shelter and two pit toilets, was developed at the east node; the west node consisted of the Guide Shelter. Circulation occurred between the nodes. Circulation patterns of ingress to and egress from the site are not clear from historic photographs, with the exception of one photograph dated 1929, in which it appears that a fairly well-delineated access trail existed southwest of the entrance to the public shelter.

During the late 1960s, 1970s, and 1980s, the Gombu Shelter, the Butler shelter, and a pit toilet were constructed at the west node. The helicopter-landing pad, two solar toilets, and one pit toilet were added to the east node. These additions have made pedestrian circulation between the two nodes more cumbersome. Climbers arrive at various locations along the middle of the ridge (where topography has the lowest elevation). They also depart from the middle of the ridge to go to the summit.

Overall, the spatial organization of the site is still recognizable in the form it had during the period of significance with two clusters of development on either end of the narrow ridge. The circulation between the two clusters still occurs, but the addition of the helipad and the toilets has altered the original linear pattern of circulation. Therefore, the circulation system has lost integrity, with the exception of a small piece of trail at the southwest corner of the Public Shelter. However the general spatial organization of the historic buildings in relation to one another and the topography of the site still retains integrity.



Contemporary photograph of Camp Muir, 2001. Note the Gombu Shelter on the left (west) end, and Weatherport (portable ranger structure) on the right (east) end. NPS Photo



Contemporary photograph of Gombu Shelter, pit toilet, and Guide Shelter, 2001. Note stairway to Guide Shelter and staging table. NPS Photo



Contemporary photograph looking from the Guide Shelter to the helipad and solar toilets, 2001. NPS Photo

Management Information

Descriptive And Geographic Information

Historic Name(s): Camp Muir
Cloud Camp

Current Name(s): Camp Muir

Management Unit:

Tract Numbers:

State and County: Pierce County, WA

Size (acres): 1.09

Boundary UTM

Boundary UTM(s):	Source	Type	Datum	Zone	Easting	Northing
	USGS Map 1:24,000	Area	NAD 27	10	596835	5187449
	USGS Map 1:24,000	Area	NAD 27	10	596686	5187440
	USGS Map 1:24,000	Area	NAD 27	10	596686	5187500
	USGS Map 1:24,000	Area	NAD 27	10	596835	5187481

GIS File Name:

GIS File Description:

National Register Information

National Register Documentation: Entered -- Documented

Explanatory Narrative:

Camp Muir, a developed area along the route of the Paradise-Cowlitz Cleaver Ascent Route, was included in the National Historic Landmark District nomination of 1997. Formerly, the structures of Camp Muir were listed on the National Register as part of the multiple property nomination of 1991.

NRIS Information:

NRIS Number:	91000176
Primary Certification:	Listed In The National Register
Primary Certification Date:	3/13/1991
Other Certifications:	Date Received/Pending Nomination
Other Certification Date:	1/29/1991
Name In National Register:	Camp Muir
Other Names In National Register:	Camp Muir Group

National Register Classification: District

Significance Level: National

Contributing/Individual: Individual

Significance Criteria: C -- Inventory Unit embodies distinctive characteristics of type/period/method of construction; or represents work of master; or possesses high artistic values; or represents significant/distinguishable entity whose components lack individual distinction
A -- Inventory Unit is associated with events that have made a significant contribution to the broad patterns of our history

Period Of Significance

Time Period: 1916 - 1936 AD

Historic Context Theme: Creating Social Institutions and Movements

Historic Context Subtheme: Recreation

Historic Context Facet: General Recreation

Area Of Significance:

Category: Entertainment/Recreation

Priority: 1

National Historic Landmark Information

National Historic

Landmark Status: Yes

Date Determined Landmark: 2/19/1997

Landmark Theme: National Park Service landscape architecture, and
National Park Service master planning

World Heritage Site Information

World Heritage Site Status: No

Cultural Landscape Type and Use

Cultural Landscape Type: Historic Site

Current and Historic Use/Function:

Use/Function Category: Recreation/Culture
Use/Function: Outdoor Recreation
Detailed Use/Function: Campground/Picnic Area
Type Of Use/Function: Both Current And Historic

Use/Function Category: Recreation/Culture
Use/Function: Monument (Marker, Plaque)
Detailed Use/Function: Monument (Marker, Plaque)
Type Of Use/Function: Both Current And Historic

Ethnographic Information

Ethnographic Survey Conducted: Yes-Restricted Information

Associated Groups

Name of Peoples:	Cowlitz (Tainapan)
Type of Association:	Both Current And Historic
Name of Peoples:	Muckleshoot
Type of Association:	Both Current And Historic
Name of Peoples:	Nisqually
Type of Association:	Both Current And Historic
Name of Peoples:	Puyallup
Type of Association:	Historic
Name of Peoples:	Yakama
Type of Association:	Both Current And Historic

Significance Description:

Documented in "Ethnographic Guide to the Archaeology of Mount Rainier National Park" by Allan H. Smith, 1964 and "Review and Assessment of the Ethnographic Literature of Mount Rainier National Park, Volumes 1 and 2" by Astrida R. Blukis Onat, 1999.

Adjacent Lands Information

Do Adjacent Lands Contribute?

No

Adjacent Lands Description:

General Management Information

Management Category: Must Be Preserved And Maintained

Management Category Date: 3/13/1991

Explanatory Narrative:

As a site listed on the National Register and part of the Mount Rainier National Historic Landmark District, Camp Muir meets the criteria for this management category.

Condition Assessment And Impacts

The criteria for determining the condition of landscapes is consistent with the Resource Management Plan Guideline definitions (1994) and is decided with the concurrence of park management. Cultural landscape conditions are defined as follows:

Good: indicates the landscape shows no clear evidence of major negative disturbance and deterioration by natural and/or human forces. The landscape's cultural and natural values are as well preserved as can be expected under the given environmental conditions. No immediate corrective action is required to maintain its current condition.

Fair: indicates the landscape shows clear evidence of minor disturbances and deterioration by natural and/or human forces, and some degree of corrective action is needed within 3-5 years to prevent further harm to its cultural and/or natural values. If left to continue without the appropriate corrective action, the cumulative effect of the deterioration of many of the character-defining elements will cause the landscape to degrade to a poor condition.

Poor: indicates the landscape shows clear evidence of major disturbance and rapid deterioration by natural and/or human forces. Immediate corrective action is required to protect and preserve the remaining historical and natural values.

Undetermined: Not enough information available to make an evaluation.

Condition Assessment: Fair

Assessment Date: 12/01/2001

Date Recorded: 03/19/2002

Park Management Concurrence: No

Level Of Impact Severity: Moderate

Condition Assessment: Good

Assessment Date: 09/30/1998

Date Recorded: 09/30/1998

Park Management Concurrence: No
Level Of Impact Severity: Moderate

Stabilization Measures:

The following measures are recommended to stabilize the Camp Muir site and improve its condition:

1) Stabilize erosion of site by formalizing the circulation system with rock-lined paths and new trail tread. Trail tread material will consist of 1 1/2" crushed rock. Rock and gravel will be obtained from a site at Camp Muir.

2) Stabilization measures for the buildings at Camp Muir are covered by the List of Classified Structures (LCS). However, updated descriptions have not been entered into the LCS database as of yet. The needed stabilization measures are described below:

-Public Shelter:

Re-mortar and waterproof walls. Cracks are present on interior walls. Waterproof coating is peeling.

Fix torn tarpaper on ceiling. This is causing the roof to leak.

Remove and replace wood in window frame that has dry rot.

Improve ventilation inside by installing a ceiling fan.

Replace exposed roof joists that have dry rot and are weathered.

Replace stone that has been lost from southeast wing wall.

-NPS Storage Building:

Replace foundation.

Reconstruct mortared masonry walls.

-Guide Shelter:

Fix leak around Plexiglass skylight.

Remove and replace wood in window frames that have dry rot.

Re-mortar stone masonry walls.

Fix damaged tarpaper roof.

Replace water damaged roof joists.

Impact:

Type of Impact: Erosion

Internal/External: External

Description:

A combination of natural and human-caused erosion has reduced the elevation of the ridge significantly. Ground erosion also imperils several buildings and a ruin on the site.

Type of Impact: Impending Development

Internal/External: Internal

Description:

Additional development has the potential to further congest the site and compromise its integrity.

Type of Impact:

Exposure To Elements

Internal/External:

External

Description:

Wind scour and the sloughing activity of the freeze/thaw cycles of the snow and ice are reducing the north and south slopes of the ridge. The Cowlitz Glacier and the Muir Snowfield also are scouring the ridge. This exposure is also degrading the structural integrity of the buildings.

Agreements, Legal Interest, and Access

Management Agreement: None

Explanatory Narrative:

NPS Legal Interest: Fee Simple

Explanatory Narrative:

Public Access: Unrestricted

Treatment

Approved Treatment: Undetermined

Approved Treatment Document:

Document Date:

Explanatory Narrative:

Approved Treatment Completed:

Approved Treatment Cost

LCS Structure Approved

Treatment Cost: \$0

Landscape Approved

Treatment Cost: \$0

Cost Date:

Level of Estimate:

Cost Estimator:

Explanatory Description: Cost estimates for the Camp Muir buildings were made in 1976, but never approved.

Stabilization Costs

LCS Structure Stabilization Cost:

Landscape Stabilization Costs: \$30,700

Cost Date: March 25, 2002

Level Of Estimate: C - Similar Facilities

Cost Estimator: Support Office

Explanatory Description: This cost estimate is based on the circulation project described in "Stabilization Measures". See "Stabilization Measures" for more detail.

Labor = \$5,200

Allow 10 days for a two-person, seasonal crew at GS-05 and one supervisor at GS 11/12.

Equipment = \$25,500

Rental of bobcat loader and portable rock crusher =

\$3,000

Hoisting/hauling equipment to site = \$15,000 for two flights

Mobilization/Demobilization of camp and equipment - \$7,500

Documentation Assessment and Checklist

Documentation Assessment:

Documentation:

Document: Administrative History

Year Of Document: 1996

Adequate Documentation: No

Explanatory Narrative:

The Administrative History does not describe or analyze the landscape characteristics and features of Camp Muir.

Document: General Management Plan

Year Of Document: 2002

Adequate Documentation: No

Explanatory Narrative:

The General Management plan does not describe or analyze the landscape characteristics and features of Camp Muir.

Document: Historic Resource Study

Year Of Document: 1981

Adequate Documentation: No

Explanatory Narrative:

The Historic Resource Study does not describe or analyze the landscape characteristics and features of the Camp Muir.

Appendix

Bibliography

Citations:

Citation Author:	Burtchard, Greg C
Citation Title:	Environment, Prehistory, & Archeology of Mount Rainier National Park, Washington
Year of Publication:	1998
Publisher:	National Park Service
Source Name:	Other
Citation Type:	Both Graphic And Narrative
Citation Location:	CCSO, MORA

Citation Author:	Catton, Theodore
Citation Title:	Wonderland, An Administrative History of Mount Rainier National Park
Year of Publication:	1996
Publisher:	National Park Service
Source Name:	CRBIB
Citation Number:	017248
Citation Type:	Both Graphic And Narrative
Citation Location:	CCSO, MORA

Citation Author:	National Park Service
Citation Title:	Mount Rainier National Park, 1950-1992. Mount Rainier Wilderness Management Plan, 1989-1992
Year of Publication:	1992
Publisher:	National Park Service
Source Name:	CRBIB
Citation Type:	Narrative
Citation Location:	MORA

Citation Author: John Morse and Associates
Citation Title: "Field Investigation and Research of Existing
Conditions, Camp Muir, Mount Rainier National Park"
Year of Publication: 1973
Source Name: Other
Citation Type: Graphic
Citation Location: MORA

Citation Author: Carr, Ethan
Citation Title: National Historic Landmark District Nomination,
Mount Rainier National Park
Year of Publication: 1997
Publisher: NPS
Source Name: Other
Citation Type: Narrative
Citation Location: MORA, CCSO

Citation Author: Toothman, Stephanie
Citation Title: National Register Historic Property, Multiple Property
Nomination, Mount Rainier National Park
Year of Publication: 1991
Publisher: NPS
Source Name: Other
Citation Type: Narrative
Citation Location: MORA, CCSO

Citation Author: The Portico Group
Citation Title: Camp Muir Rehabilitation Schematic Design
Feasibility Report, Draft
Year of Publication: 2002
Source Name: Other
Citation Type: Narrative
Citation Location: MORA

Supplemental Information

Title:	"1985 Solar Assisted Composting Toilet - Camp Muir"
Description:	1985. Located: Mount Rainier National Park files. P058. Camp Muir Pit Toilet (solar).
Title:	"Major Repairs"
Description:	No date. Located: Mount Rainier National Park files. PO51, Camp Muir Public Shelter.
Title:	Comprehensive Design, Camp Muir Shelter, Mount Rainier
Description:	August 3, 1973. Team manager, Pacific Northwest Team, Denver Service Center, to Regional Director, Pacific Northwest Region. Located: Denver Service Center file reports (microfiche) and Columbia Cascades Support Office.